

## ***Research That Helps To Feed the World's People***

November brings the harvest's end and Thanksgiving in the United States. It is a season when we spend a lot of time with food on our minds and on our tables. But in many places around the world, food production still isn't keeping people well nourished. Hunger persists for more than 800 million people.

At the World Food Summit in 1996, heads of state and government pledged to work toward food security for all and to halve the number of undernourished people by 2015. Today there has been measurable progress toward that goal; the number of undernourished is falling by about 8 million people a year, mainly because of major gains in China. But in many other countries, hunger is actually growing.

The net rate of decline is not nearly enough to reach the World Food Summit target. To do that, the numbers must fall by about 20 million a year, according to a bold statement recently issued by 15 past World Food Prize laureates. The annual World Food Prize, often regarded an equivalent to the Nobel Prize, honors those who have made significant contributions to improving world food security. It was conceived in 1986 by Norman E. Borlaug, who received the 1970 Nobel Peace Prize as father of the Green Revolution.

The laureates call for a recommitment to reaching the World Food Summit goal. Their statement can be found in its entirety at [www.worldfoodprize.org/statement.htm](http://www.worldfoodprize.org/statement.htm).

The statement also specifically recognizes the importance of strong public and international research institutions and continued research investment to enhance agricultural productivity. "It was efforts at just such institutions...that produced the great gains in agricultural production during the 1970s, '80s, and '90s, averting famine in many areas," they write.

Factors that contribute to hunger are many and complex, often involving issues and infrastructure far beyond agriculture. But new knowledge and technology derived from research can help remedy malnutrition by finding new ways to improve harvests—whether through breeding plants for higher levels of dietary nutrients, preventing postharvest spoilage of crops, or developing practices that minimize the need for pesticides.

Many research advances from ARS and other U.S. institutions have been put to work locally and globally. Some projects are specifically aimed at improving nutrition in those most vulnerable to hunger in the developing world. For example, micronutrient deficiencies, particularly of vitamin A, iron, and zinc, affect more than half the population of West Africa. ARS is working with Nigerian scientists to develop maize cultivars with higher bioavailability of these essential nutrients. This would be a valuable advance for Nigeria and other countries where a maize-intense diet is common.

Other ARS programs that target hunger in developing countries include work to improve the nutritional value of Andean potatoes, potentially boosting the health of subsistence farmers in Bolivia and other Andean countries, and finding ways to fight fungal diseases of bananas and plantains, such as sigatoka.

International research cooperation is essential to global progress. As the laureates point out, "It is imperative that we work together to strengthen the research and policy framework underpinning the necessary productivity increases in agriculture, livestock, and aquatic resources in an environmentally sustainable way."

ARS believes international partnerships mean strength in research and benefits for us all. An excellent example of the benefits is cocoa, a critical cash crop for small farmers in many tropical nations. It accounts for more than 50 percent of the export earnings of some West African nations and is important to farmers in the tropical areas of Andean nations.

But cocoa trees are threatened by fungal diseases. ARS has established collaborative research programs to develop solutions to these disease problems. Success will mean that small farmers in these developing countries will continue to have a cash crop to allow them to buy food. This in turn provides social stability to bolster food production and distribution. It will also benefit U.S. agriculture, particularly producers of dairy products, peanuts, sweeteners, and tree nuts. More than 50 percent of all U.S. almonds go directly to the chocolate manufacturing industry, and well over 70 percent of U.S. peanuts go to the candy industry or to secondary products such as oils and butter.

ARS has a proud history of helping solve the problem of hunger. Three ARS scientists are among the Laureates who have been honored with the World Food Prize. In 1992, ARS entomologists Raymond Bushland and Edward F. Knipling received the World Food Prize for developing the sterile insect technique to control the screwworm, a pest that has caused enormous losses in livestock. In 1996, Henry M. Beachell was honored for his lifetime achievements in rice breeding—initially with ARS and then with the International Rice Research Institute in the Philippines. Beachell is considered the father of the Green Revolution in rice, which has fed millions.

ARS is pleased to be a part of the global research team that is enhancing agriculture's ability to feed the world's population. We salute Pedro A. Sanchez, the 2002 World Food Prize laureate, and all the former laureates for their accomplishments and continuing vision and leadership.

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